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U.S. Appln. No. 09/698,143

REMARKS

Claims 1-39 have been examined. Claims 4, 7, 9, 11 and 17 have been objected to because of informalities, claims 3, 6, 8, 9, 12 and 20-25 have been rejected under 112, second paragraph, and claims 1, 3-10, 12-19, 26-31, 38 and 39 have been rejected under 35 U.S.C. § 102(e).

I. Formal Matters

Applicants thank the Examiner for providing the initialed copy of second page of the Form PTO-1449.

Applicants thank the Examiner for acknowledging the claim for foreign priority under 35 U.S.C. § 119.

II. Allowable Subject Matter

Claims 2, 11, and 32-35

The Examiner has objected to claims 2, 11, and 32-35 for being depended on a rejected base claim, but indicates that such claims would be allowable if rewritten in independent form.

Since claims 2 and 32-35 have been rewritten in independent form, such claims are believed to be allowable. Also, since the rejection of base claim 1 is believed to be overcome, the objection to claim 11 is likewise believed to be overcome.

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Claims 20-25, 36 and 37

Since the 35 U.S.C. § 112, second paragraph, rejection of claims 20-25, 36 and 37 is believed to be overcome, such claims are believed to be in condition for allowance.

III. Objection to the Abstract

The Examiner has objected to the Abstract because it contains the term “comprising.” Applicants submit that the amendments to the Abstract overcome the objection.

IV. Objection to Drawings and specification

The Examiner has objected to drawings and specification because of informalities. Applicants submit that the amendments to claim 11 and 28 overcome the objection.

V. Objection to the claims

The Examiner has objected to claims 4, 7, 9, 11, and 17 because they contain various informalities. Applicants submit that the amendments to such claims overcome the objection.

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VI. Rejection under 35 U.S.C. § 112

Claims 3, 6, 8, 9, 12, and 20-25 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended these claims to overcome the rejection.

VII. Rejection under 35 U.S.C. § 102(e) over Miyazawa

The Examiner has rejected claims 1, 3-10, 12-19, 26-31, 38 and 39 under 35 U.S.C. § 102(e) as being anticipated by Miyazawa. Applicants respectfully traverse the rejection and submits that the present invention is patentable over Miyazawa.

Claim 1

As recited in independent claim 1, a spacer is disposed between said lid member and said ink absorbing member and is separate from the lid member. On the other hand, in Miyazawa, ribs 22 are integrally provided on a cover body 20 as shown in Fig. 1 and are not separate from the cover body 20. Thus, Miyazawa does not disclose or teach the features recited in claim 1. Accordingly, Applicants submit that claim 1 is patentable over the reference.

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Claims 3-10, 12, and 13

Since claims 3-10, 12 and 13 depend from claim 1, they are allowable for at least the reasons that claim 1 is allowable. They are further allowable by reason of the additional limitations set forth therein.

Claims 14, 15 and 17

As recited in claim 14, an internal space of a container body is divided into areas by walls, and only one of said areas stores ink and is provided with said ink supply port. Miyazawa merely teaches that an internal space of a container body is divided by walls into plurality of chambers according to a number of ink types. Thus, Miyazawa does not teach that only one of the chambers stores ink and is provided with said ink supply port. Since Miyazawa fails to disclose, teach or suggest all of the features recited in claim 14, Applicants submit that claim 14 is patentable.

Since claims 15 and 17 depend from claim 14, they are allowable for at least the reason that claim 14 is allowable.

Claim 16

As recited in claim 16, an internal space of the container body is divided into divided chambers by an area wall parallel to an ink supply ports arrangement direction, and one of the

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divided chambers is further divided into areas by chamber walls perpendicular to the area wall, and each of the areas is provided with one of the ink supply ports.

Figs. 7 and 8 of Miyazawa merely teach that the internal space of a container body (a cartridge main body 40) is divided by walls (partitions 43) into plurality of divided chambers (ink tanks 401c, 41m, and 41y) perpendicular to an ink supply ports arrangement according to a number of ink types. Thus Miyazawa does not disclose that the internal space of the container body is divided by the area wall parallel to the ink supply ports arrangement direction into the divided chambers.

In addition, Miyazawa does not suggest the claimed reserve ink or maintenance liquid.

Since Miyazawa fails to disclose, teach or suggest all of the features recited in claim 16, Applicants submit that claim 16 is patentable.

Claim 18

As recited in claim 18, a first lid member has first ribs which press a first ink absorbing member toward an ink supply port when the first lid member seals an opening portion of a container body. Also, a second lid member has second ribs which press a second ink absorbing member toward the ink supply port when the second lid member seals the opening portion. In addition, the height of the first ribs is different than the height of the second ribs, and the volume of the first ink absorbing member is different than the volume of the second ink absorbing

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member. Since claim 18 does not disclose or suggest such features, Applicants submit that claim 18 is patentable.

Claim 19

As recited in claim 19, a concave portion is formed on a side wall to protrude into a ink chamber. Miyazawa does not teach an ink jet cartridge having a concave portion on a side wall. Since Miyazawa fails to disclose, teach or suggest all of the limitations recited in claim 19, Applicants submit that claim 19 is patentable.

Claims 26-31

As recited in claim 26, the side wall protrudes into said container body to form a protruded portion. Miyazawa does not teach an ink jet cartridge having a protruded portion on a side wall. Since Miyazawa fails to disclose, teach or suggest all of the limitations recited in claim 26, Applicants submit that claim 26 is patentable.

Since claims 27-31 depend from claim 26, they are allowable for at least the reasons that claim 26 is allowable. They are further allowable by reason of the additional limitations set forth therein. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection and allow claims 27-31.

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Claims 38 and 39

Since claims 38 and 39 depend on allowable claim 20, they are patentable at least by virtue of their dependency.

VIII. Newly added claims

Applicants have added new claims 40-44 to provide more varied protection for the present invention. Since claim 42 contains features that are similar to the features recited above in conjunction with claim 18, Applicants submit that it is patentable for similar reasons. Also, since claims 40, 41, 43, and 44 depend upon claim 18 or 42, Applicants submit that they are patentable at least by virtue of their dependency.

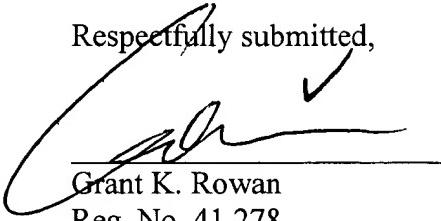
IX. Conclusion

In view of the above, reconsideration and allowance of claims 1-39 are now believed to be in order, and such actions are respectfully required. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,


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APPENDIX



VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Once Amended) An ink cartridge for use in an ink jet recording apparatus comprising:
a container body [housing] having an ink chamber and an opening portion wherein an ink absorbing member for absorbing ink is housed in [an] said ink chamber[,];
an ink supply port which communicates said ink chamber to a recording head[,];
a lid member sealing [an] said opening portion of said container body[,];
a spacer, which is disposed [inserted] between said lid member and said ink absorbing member and is separate from said lid member, wherein said spacer has a base portion which faces said lid member, and a pressing portion for pressing said ink absorbing member toward said ink supply port.

2. (Once Amended) [The] An ink cartridge for use in an ink jet recording apparatus [according to claim 1,] comprising:

a container body housing an ink absorbing member for absorbing ink in an ink chamber;
an ink supply port which communicates said ink chamber to a recording head;
a lid member sealing an opening portion of said container body; and

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a spacer inserted between said lid member and said ink absorbing member for pressing
said ink absorbing member toward said ink supply port:

wherein an ink injecting port and an air communicating port are formed in said lid member, and through holes are formed in said spacer so as to be opposed at least to said ink injecting port.

3. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein a plurality of [said] through holes [is] are provided so as to oppose [said] an injecting port independent of an extension direction of said spacer and so as to be symmetric with respect to each other.

4. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein said spacer presses said ink absorbing member toward said ink supply port at least at an area where said ink absorbing member [is opposed] opposes said ink supply port.

5. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein said [spacer is provided with a flat base at an opposite side to said lid member and with] pressing portion comprises a rib extending to a longitudinal direction of said container body at an opposite side to said ink absorbing member.

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6. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein a projection engaging with said lid member is formed in said [flat base at an opposite side to said lid member] base portion.

7. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein said [spacer is provided with a flat base at an opposite side to said lid member and with] pressing portion comprises plural ribs extending to a longitudinal direction of said container body [at an opposite side to said ink absorbing member, and said each adjacent rib is joined], and each of said plural ribs is joined to each other.

8. (Once Amended) [An] The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein said pressing portion comprises ribs which are positioned at both sides of said container body in a width direction.

9. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein a convex portion is formed at said ink supply port, said convex portion protrudes from [the] a bottom of said container body and has an ink flow path communicating with said ink supply port, and said [ribs]pressing portion comprises ribs which contact with said ink absorbing member at an area of said ink absorbing member which does not oppose [where] said ink flow path [is not opposed].

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10. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 5, wherein projections are formed at corners of said base portion in a longitudinal direction so as to contact with [the] an inside of said ink container body.

11. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein said spacer comprises [is provided with a flat base at the opposite side to said lid member and with] ribs extending to [the] a longitudinal direction of said container body at the opposite side to said ink absorbing member, and said ribs are provided with a [concave] convex portion at [the] an area of said ink absorbing member [where] which opposes said ink supply port [is opposed].

12. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim [8] 1, wherein said pressing portion comprises a projection [is formed at said base] for pressing said ink absorbing member toward said ink supply port.

13. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 1, wherein said container body is divided into a plurality of ink chambers by walls, each of said plurality of ink chambers communicating with [the] said ink supply port [by walls], and

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each of said plurality of ink chambers is provided with said ink absorbing member and said spacer [is pressed by said spacer and inserted toward said ink supply port].

14. (Once Amended) An ink cartridge for use in an ink jet recording apparatus comprising:

a container body having an ink absorbing member for absorbing ink in an ink chamber[,];

an ink supply port which communicates said ink chamber to a recording head[,];

wherein an [the] internal space of said container body is divided into a plurality of areas by walls, and

[at least] only one of said areas [storing] stores ink and is provided with said ink supply port.

15. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 14, wherein said internal space of said container body is divided by first walls perpendicular to [the] an ink supply needles arrangement direction into chambers [so as to form a space], each of said chambers is opposed to each ink supply needle[,] and said [space is] chambers are divided by a second [walls] wall perpendicular to the first walls.

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16. (Once Amended) [The] An ink cartridge for use in an ink jet recording apparatus [according to claim 14], comprising:

a container body having an ink absorbing member for absorbing ink in an ink chamber;
ink supply ports which communicate said ink chamber to a recording head;
wherein an internal space of said container body is divided into a first divided chamber and a second divided chamber by [walls] an area wall parallel to [the] an ink supply [needles] ports arrangement direction,

wherein [and] said first divided chamber is further divided into areas by chamber walls perpendicular to said area wall, and each of said areas is provided with one of said ink supply ports [are divided so as to communicate with said ink supply ports],

wherein said second divided chamber contains one of reserve ink and maintenance liquid,
and

wherein said reserve ink replenishes ink in one of said areas and said maintenance liquid is used during a maintenance operation of said ink cartridge.

17. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 14, wherein [the divided] one of said areas [of said container body having] which has no ink supply ports [are] is open to outside of said container body, and said container body is installed in an air tight and gas impermeable package so as to maintain a pressure lower than atmospheric pressure.

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18. (Once Amended) An ink cartridge system [for use in an ink jet recording apparatus], comprising:

a container body having [an ink absorbing member for absorbing ink in] an ink chamber[,];

an ink supply port which communicates said ink chamber to a recording head[,];

a first lid member [sealing] adapted to seal an opening portion of said container body, wherein first ribs are formed in the back of the first lid member; [and]

a first ink absorbing member adapted to absorb ink in said ink chamber when said first lid member seals said opening portion of said container body;

a second lid member adapted to seal said opening portion of said container body, wherein second ribs are formed in the back of the second lid member;

a second ink absorbing member adapted to absorb ink in said ink chamber when said second lid member seals said opening portion of said container body;

wherein, when said first lid member seals said opening portion of said container body, said first ribs oppose [so as to be opposed to] said ink supply port[s] and [to] press the first ink absorbing member toward said ink supply port [according to height of the ink absorbing member],

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wherein, when said second lid member seals said opening portion of said container body,
said second ribs oppose said ink supply port and press the second ink absorbing member toward
said ink supply port,

wherein a first rib height of said first ribs is different than a second rib height of said
second ribs, and

wherein a first member volume of said first ink absorbing member is different than a
second member volume of said second ink absorbing member.

[wherein ink volume is adjusted according to the volume of said ink absorbing member.]

19. (Once Amended) An ink cartridge for use in an ink jet recording apparatus,
comprising:

a container body installed in a holder of the ink jet recording apparatus having an ink
absorbing member for absorbing ink in an ink chamber[,];

an ink supply port which communicates said ink chamber to a recording head, [and]
wherein said ink supply port is formed on a bottom wall of said container body;

a concave portion formed on a side wall of said container body to protrude into said ink
chamber; and

a wall partitioning said ink chamber, wherein said wall is positioned inside of the side
wall [portion contacting] in contact with [said] the holder.

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20. (Once Amended) An ink cartridge for use in an ink jet recording apparatus, comprising:

a container body having [the] a first side wall, [the] a second side wall, [the] a third side wall, and a bottom wall[;], wherein said container houses an ink absorbing member for absorbing ink in an ink chamber[,];

an ink supply port which communicates said ink chamber to a recording head, wherein [an] said ink supply port is formed on the bottom wall and is positioned close to the first wall[,];

a concave portion formed at the second side wall so as to protrude to said ink chamber[,];
at least one rib formed at said concave portion so as to be parallel to the third side wall and to protrude to said ink supply port[,]; and

an ink absorbing member comprising an elastic ink absorbing member[;], wherein said ink absorbing member is supported by said first side wall and said rib, and has [the] a length corresponding to said ink chamber regulated by said rib.

23. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 20, wherein ribs protruding from the second side wall are formed [at] on said ink chambers partitioned by [the side] partition walls of said container body.

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26. (Once Amended) An ink cartridge for use in an ink jet recording apparatus comprising:

a container body having a first side wall and a bottom wall, wherein the first side wall protrudes into said container body to form a protruded portion and an ink absorbing member for absorbing ink is housed in an ink chamber[,];

an ink supply port which communicates said ink chamber to a recording head, wherein said ink supply port is formed on the bottom wall; and

a lid member sealing an opening portion of said container body[, wherein a side wall of said container body protrudes to the ink chamber].

27. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 26, wherein [the] a bottom portion of the side wall in said container body protrudes to the ink chamber.

28. (Once Amended) An ink cartridge for use in an ink jet recording apparatus according to claim 26, wherein said container body has [a long and a short] a second side wall[; and the long] which is shorter than said first side wall [of said container body protrudes to the ink chamber].

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29. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 26, wherein [the bottom portion of said container body] said protruded portion includes a sloping portion [which protrudes to the ink chamber].

31. (Once Amended) The ink cartridge for use in an ink jet recording apparatus according to claim 26, wherein said ink supply port communicates with a concave portion formed at a projection extending from a substantially central portion of the bottom wall [substantially to the central portion in the direction of the long side wall of said container body].

32. (Once Amended) [The] An ink cartridge for use in an ink jet recording apparatus [according to claim 1,] comprising:

a container body housing an ink absorbing member for absorbing ink in an ink chamber;
an ink supply port which communicates said ink chamber to a recording head;
a lid member sealing an opening portion of said container body; and
a spacer inserted between said lid member and said ink absorbing member for pressing
said ink absorbing member toward said ink supply port; and

wherein a storage device storing information regarding an ink stored amount is attached so as to be readable by a recording apparatus.

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33. (Once Amended) [The] An ink cartridge for use in an ink jet recording apparatus [according to claim 14, wherein] comprising:

a container body having an ink absorbing member for absorbing ink in an ink chamber;
an ink supply port which communicates said ink chamber to a recording head;
the internal space of said container body divided into a plurality of areas by walls; and
wherein at least one of said areas storing ink is provided with said ink supply port, and a
storage device storing information regarding an ink stored amount is attached so as to be
readable by a recording apparatus.

34. (Once Amended) [The] An ink cartridge for use in an ink jet recording apparatus [according to claim 18, wherein] comprising:

a container body having an ink absorbing member for absorbing ink in an ink chamber;
an ink supply port which communicates said ink chamber to a recording head;
a lid member sealing an opening portion of said container body; and
ribs formed in the back of the lid member so as to be opposed to said ink supply port and
to press the ink absorbing member toward said ink supply port according to a height of the ink
absorbing member, wherein ink volume is adjusted according to the volume of said ink
absorbing member, and a storage device storing information regarding an ink stored amount is
attached so as to be readable by a recording apparatus.

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35. (Once Amended) [The] An ink cartridge for use in an ink jet recording apparatus [according to claim 19,] comprising:

a container body installed in a holder of the ink jet recording apparatus having an ink absorbing member for absorbing ink in an ink chamber;
an ink supply port which communicates said ink chamber to a recording head; and
a wall partitioning said ink chamber positioned inside a side portion in contact with said holder;

wherein a storage device storing information regarding an ink stored amount is attached so as to be readable by a recording apparatus.

38. (Once Amended) [An] The ink jet cartridge for use in an ink jet recording apparatus according to claim 20, wherein a width of the ink chamber is narrower than [widths] a width of the [short] second side [walls] wall of the ink chamber.

39. (Once Amended) [An] The ink jet cartridge for use in an ink jet recording apparatus according to claim 20, wherein a width measured in a direction parallel to the [short] second side [walls] wall of the ink chamber is wide at an opening portion of the container body and narrow at an ink supply port side of the container body.

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The abstract is amended as follows:

An ink cartridge [comprising] containing a container body 3 housing an ink absorbing member 6' so as to absorb ink, a lid member 4, and a spacer 30 pressing the ink absorbing member 6' between the lid member 4 and ink absorbing member 6'. It is possible to decrease the volume of the ink absorbing member 6' without changing structure in the vicinity of an ink supply port by using the same shape of a container body 3 and a lid member 4.